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INVESTIGATING THE INFLUENCE OF PLASTICS ENCLOSURE ON THE POSITIONING ACCURACY OF GNSS RECEIVER

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Thesis submitted to the Universiti Teknologi MARA Malaysia
in partial fulfilment for the award of the degree of the
Bachelor of Surveying Science and Geomatics (Honours)

JULY 2024

DECLARATION

I declare that the work on this project/dissertation was carried out in accordance with the regulations of Universiti Teknologi MARA (UiTM). This project/dissertation is original and it is the result of my work, unless otherwise indicated or acknowledged as referenced work.

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ABSTRACT

Global Navigation Satellite System (GNSS) provide an accuracy data and rely heavily on precise time measurements. During rainy day, many users employ plastic enclosures to shield GNSS receivers from wet due to the receiver is not waterproof and the users are not confidence the instrument is waterproof. The aim of this research is made to investigate the significant effect on positioning when receiver covered by plastic. The study will identify and select various types of plastic material used in GNSS receiver enclosures, considering aspect thickness. Next, multiple techniques of positioning (Network RTK, Network Static) will be deployed to identify the effect of plastic. The result from the shows that all selection of plastics used have less effect on the accuracy assessment which umbrella is the lowest. It is considering the shape of umbrella itself which is force the water to fall down which make the water cannot block the receiver from signal. The study offers practical insights for surveyors and professionals who rely on GNSS technology, emphasizing the benefits of using plastic enclosures to maintain accuracy during rainy surveying work. Understanding the impact of plastic enclosures on GNSS survey accuracy is crucial, the plastics can be used but need to have extra attention and aware with accuracy that can be decrease, especially with the type of garbage bag and for heighting.

Keyword:
Global Navigation Satellite System (GNSS), Plastic enclosure, accuracy

LIST OF FIGURES